Established in 2008

"बेटी बचाओ, बेटी पढ़ाओ"

Jayoti Vidyapeeth Women's University, Jaipur

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INDIA'S SPACE DIPLOMACY

Submitted by

RAHUL CHOUDHARY

Enrollment No :

JVR-II/22/11025

Under the Guidance of

DR. SAPNA GEHLOT

Department of Humanities & Social Sciences

Faculty of Education & Methodology

A Synopsis

Proposal Submitted in

fulfillment of the requirements for the award of the Degree of

DOCTOR OF PHILOSOPHY

(POLITICAL SCIENCE)

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INDIA'S SPACE DIPLOMACY

INTRODUCTION

The launch of the first space satellite 'SPUTNIK-I' in 1957 ushered in a new era of human progress. This was the first time humans successfully crossed the earth's boundary; in Hannah Arendt's words, it was the first "step toward escape from men's imprisonment to the earth". Along with the progress this new development ensued the new rivalry in the space between the two superpowers US and USSR and ensured that no frontier remain untouched by their Cold War rivalry and new way of projecting national superiority.

In the 21st century, with greater technological advancements, the importance of space has increased manifold. Now space capabilities have a bearing on every domain e.g. economic, social, commercial, security etc. This realization is shaping the efforts of states and non-state actors to acquire the space capabilities to harness its potential. The global space economy is expected to grow from the present $450 billion to over $1 trillion by 2040s. These new developments in outer space have changed the dynamics of international engagement and led to the emergence of a new diplomacy i.e. Space diplomacy.

Space diplomacy refers to the use of diplomatic and cooperative efforts in the realm of outer space activities. It involves interactions, negotiations, and collaborations between different countries and international organizations to address common challenges, promote the peaceful use of space, and advance mutual interests related to space exploration, scientific research, satellite operations, and space technology development.

In contemporary times, space diplomacy is gaining salience as it is opening up new gateways of cooperationalthough areas of conflict are still pervasive. Countries like the US, Russia, China, Japan, the EU and India are big players in the space domain and new influential non-state actors e.g. SpaceX and Blue Origin are also keenly interested in its exploration.

In the last three decades, India's space agency ISRO (Indian Space Research Organisation) has successfully established itself as an important and reliable

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partner in the International Space community. In the 1960s with the assistance of the US, UK and West Germany, India's first international launch station at Thumba; officially known as Thumba Equatorial Launching Station (TERLS) to study equatorial electro jet was created.its first satellite Aryabhata was launched by USSR in 1975. With these small achievements later on India successfully developed its own launch vehicles such as ASLV, PSLV, GSLV etc. ChandrayanI was India's first lunar probe mission launched in 2008. One of the notable findings of the Chandrayaan-1 mission was the discovery of water molecules on the lunar surface.

On September 24, 2014, the Mars Orbiter Mission launched by ISRO successfully entered the Mars orbit and India became the first nation to do so in their first attempt. India's space capability was also demonstrated when ISRO's Polar Satellite Launch Vehicle successfully launched the 104 satellites in their intended orbit. The success of these initiatives has established India as a pioneer nation in space research and this is shaping India's Space Diplomacy.

India's Space Diplomacy is visible in India's decision to launch a SAARC satellite which culminated in the development of the South Asia Satellite GSAT-9 launched by India in May 2017. South Asia Satellite is a communication satellite built by ISRO to provide a variety of communication services over the South Asia region.

Through its space diplomacy, India wanted to keep a check on external influence in its backyard and increase its global influence by leveraging space diplomacy.

RESEARCH QUESTIONS

1. Does the development of India's space capabilities can be attributed to Space diplomacy?
2. What are the major bilateral and multilateral partnerships and collaborations that India has pursued in the field of space exploration and satellite technology, and what are their implications for India's geopolitical interests?
3. How has India utilized space diplomacy to enhance its regional influence and cooperation with neighbouring countries, particularly in South Asia?

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4. What are the implications of India's space diplomacy for its national security and defence capabilities, including the use of space assets for surveillance, communication, and strategic purposes?

HYPOTHESIS

- India's space capabilities are the result of Space diplomacy as well as India's diplomatic ability to harness aid and assistance from both cold war blocks.
- India's space diplomacy efforts have had substantial positive impacts in several domains. Firstly, it suggests that through strategic engagement with other nations in space-related activities, India has been able to strengthen its geopolitical influence. Second, by fostering bilateral and multilateral partnerships, India has expanded its diplomatic reach, influencing decision-making processes and alliances in global space governance.
- Secondly, it argues that India's space diplomacy has facilitated regional cooperation. By collaborating with neighbouring countries and other nations in the Indian Ocean region, India has created opportunities for joint space missions, data sharing, and technology transfer. Such collaboration promotes trust, dialogue, and knowledge exchange, thereby fostering regional stability and cooperation in space endeavours.
- India should more actively participate in international institutions and treaty negotiations for creating a free and rule-based international order in Outer space.

LITERATURE REVIEW

The framework of Space diplomacy is of recent origin though not its practice in the international arena. As there is a lack of literature on space diplomacy but new scholarship is emerging as its salience is realized by the different actors. Indianstrategistsare looking with keen interest that how India would leverage its space diplomacy for the advancement of its geopolitical interests.

In the article **Space Diplomacy:The Final Frontier of Theory and Practice** authors describe space diplomacy as"processes of dialogue, carried out by actors in pre-

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existing or emerging contexts, structures, institutions or venues, which result in outcomes of co-operation or conflict on a given space issue". This article traces the precursor of space diplomacy in science diplomacy and situates its success on "political neutrality of knowledge and expertise in space and the desire to achieve international economic cooperation". The failure of diplomacy in space highlights that it is one of the most competitive conflict-prone regions. This article also identifies an insightful framework which consists of three mechanisms i.e. (a) communication; (b) persuasion and (c) bargaining, to facilitate space diplomacy. This framework can be useful while reflecting upon India's space diplomacy.

Jan Worner in his article **Space Diplomacy** as "the integration of the collaboration on knowledge, technology and legislation involved in science diplomacy with the expanded exploration of space". He also briefly reflects upon the history of space whichhe divided into four time periods, (i)Space 1.0: Astronomy (+Astrology) until the 1950ies; (ii) Space 2.0: Race in Space, Apollo Era 1950ies until 1975; (iii) Space 3.0: First Steps in International, Institutional Co-operation, ISS Era 1975 und 2007 and (iv) Space 4.0: New Space since 2007, each period is distinguished by the degree of cooperation and competition in space among major players. He adds that present events are leading us towards Space 5.0 which would be characterised by "nationally focused space activities".

In his book **Politics Among Nations**, Hans Morgenthau listed the 8 elements of national power which comprise natural resources, industrial capacity, military preparedness, population, national character, national morale and the quality of diplomacy. He further states that "of all the factors which make for the power of a nation, the most important and unstable is the quality of diplomacy". He further states that "diplomacy is the brains of national power". This highlights the salience of diplomacy in a global order where countries sometimes find more interest in relative gains rather than absolute gains.

R. Aravamudan in his book **ISRO A Personal History** has beautifully captured the evolution of India's space programme. It depicts how India's space capability evolved from a sort of dependency to self-dependent. As India's first satellite is launched by USSR but in the meantime, India itself developed its own launch vehicles. This book nicely

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captured these new developments which in present times are shaping India's Space diplomacy.

The biographical account of Vikram Sarabhai, **Vikram Sarabhai: A Life** by Amrita Shah provides a profound insight into the vision of a man who shaped India's space journey. He was the founder of ISRO. It is the vision of Sarabhai which remains the driving force of India's ambitious space programmes.

Vidya Sagar Reddy Avuthu in his article **India's Space Diplomacy** provides an important insight that howIndia's space diplomacy can be a useful foreign policy tool. It also mentioned Prime Minister Narendra Modi's speech at ISRO headquarters on the occasion of the successful launch of a French satellite by India's Polar Satellite Launch Vehicle (PSLV). It was a moment depicting the changing global dynamics and India's relations with great powers. He also encouraged the ISRO to develop a satellite for SAARC nations, with the aim of a peaceful and prosperous neighbourhood.

The book '**From fishing hamlet to Red Planet: India's space journey'** provides a thematic overview of India's space program and how it evolved by taking baby steps. It begins with the development of a sounding rocket launch station in a fishing hamlet, followed up by the building of rockets to satellites and its own satellite launch vehicles. This book covers the incredible journey of ISRO to Mars. It also provides a glimpse into India's future initiatives such as the aim of creating Indian human space flight.

Marco Aliberti in his book **India in Space: Utility and Geopolitics** deals with India's comprehensive capacity in space. Beginning with a historical perspective it also provides an overview of ISRO's new developing capabilities from infrastructural development to commercial engagement and its increasing role in new security initiatives in space. This bookalso reflects upon the use of space by India for larger socio-economic developments. India is using its space technological development for resource management, providing access to education and healthcare care services to its population.

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RESEARCH METHODOLOGY

A mixed methodology comprising Qualitative and Qualitative methods will be used for the purpose of the study. Primary sources, historical documents related to the development of India's space engagement, Indian government reports, ISRO's reports, accounts of ISRO scientists, scholarly journal articles, interviews and autobiographies of important personalities associated with the development of India's space programmes.

In secondary sources, the researcher will take help from web resources, books and journals.

THEORETICALAPPROACHES

As space is an arena of conflict however cooperation is also possible. Cooperating in Space through devising new institutional mechanisms can serve the essence of Space Diplomacy and can make countries well off. Liberal institutionalism focuses on the development of these cooperative mechanisms by promoting rules and norms-based order. The Outer Space Treaty is such an example of vying for collective and peaceful governance of space. Artemis Accord also provides an opportunity for greater collaboration in space. Cooperation is the essence of Space Diplomacy and is actively engaging and assisting other countries in the development of their space dreams.

Human entry in Space opens up a new horizon for human progress. But it also brought cut throat competition in space which could be a precursor to greater conflict. As resources on earth are scarce, a new race has begun for the exploitation of resources in outer space. Realists stress the state's survival and enhancement of national power, which wouldn't be possible without being capable in emerging technologies. A realist framework can provide an important insight into patterns of emerging competition and rivalry in the space domain and how space diplomacy can have an important role to play in it. It would be an important lens to analyse the initiatives taken by India in space to promote its national interests.

Outer space is a part of Global Commons so there is also tragedy as Garett Hardin's thesis 'Tragedy of Common' suggests. But in my opinion, we can save outer space from

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the fate of the 'tragedy of commons' through space diplomacy. Though my research is focusedon India's Space Diplomacy but I want to apply this framework tomy research to assess India's role and contribution to the management of global commons in a responsible manner.

CASE STUDIES

CASE STUDY I: India's Engagement with major space power with a special focus on US and USSR (now Russia) till 2015.

CASE STUDY II: Contribution of India to regional cooperation in the SAARC region through Space programmes with a special focus on South Asia Satellite.

RESEARCH CONTRIBUTION

- This research will provide historical insights into the evolution, motivations and strategies employed by India in leveraging space technology for diplomatic purposes.
- Regional geopolitical analysis of this research can help India in framing or projecting its space diplomacy.
- This research will also contribute to existing literature reflecting upon the space cooperation of India with major space powers and its outcomes.
- One of the important parts of this research is to assess India's national security threats and its defence capabilities which will increase the corpus of India's future security preparedness.

REFERENCES:

Aravamudan, R. A. (2017). *ISRO A Personal History.* Harper Collins Publishers India.

Arendt, H. (1998). *The Human Condition.* the University of Chicago press.

Avuthu, V. S. (2014, July 25). *India's Space Diplomacy*. Retrieved from the diplomat.com: https://thediplomat.com/2014/07/indias-space-diplomacy/

isro.gov.in. (2017, May 5). Retrieved from ISRO: https://www.isro.gov.in/mission_GSLVF09.html

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''बेटी बचाओ-बेटी पढ़ाओ''

Morgenthau, H. (1948). In H. Morgenthau, *Politics among Nations: the struggle for Power and Peace* (p. 105). New York: Alfred A. Knopf.

Pekkanen, M. K. (2023). Introduction. Space Diplomacy: The Final Frontier. *Hague Journal of Diplomacy*, 193-217.

Rao, P. M. (2015). *From fishing hamlet to red planet: India's space journey.* Harper Collins.

Shah, A. (2016). *Vikram Sarabhai: A Life.* Penguin Books Limited.

Worner, J. (2023). space diplomacy. *HagueJournal of Diplomacy*, 437-445.